

REMARKS

In the outstanding office action, claims 1-118 were presented for examination. Applicants note with appreciation the allowance of claims 1-35, 58-69, and 95-99. Claims 36-57, 70-94, and 100-118 were rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 4,827,217 issued to Paulson et al. in view of United States Patent No. 5,891,031 issued to Ohyu et al.

Claims 9, 58, and 61 have been amended to correct minor typographical and grammatical errors. Specifically, claim 9 has been amended to replace the semicolon with a period at the end of the claim. Claim 58 has also been amended to replace "Apparatus" with "An apparatus" at the beginning of the claim. Finally, claim 61 has been amended to include the word "at" so that the limitation now reads "at least two concentric coils". Applicants submit that these amendments do not change the scope of any claim and are made merely to fix minor typographical or grammatical errors. No new matter has been added.

Claims 36, 45, 70, 79, 88, and 100 have been amended to include the limitation of "said barrier being substantially stationary with respect to the patient and the amount of deformable material within said container being constant . . . the patient remains stationary and said detector assembly moves with respect to said barrier when the measurements are being made". Applicants respectfully submit that this limitation is clearly not shown, disclosed, or taught by the Paulson et al. reference alone or in combination with the Ohyu et al. reference. Support for this amendment is clearly found in the application as filed thus no new matter has been added.

Referring now to claim 94, the same has been amended to include the limitation of "the barrier being spaced a predetermined distance from the patient . . . the amount of deformable material in the flexible bag remaining constant during a measuring sequence, the instrument being moved with respect to the barrier during the measuring sequence", which applicants respectfully submit is clearly not shown, disclosed, or taught by the

Paulson et al. reference alone or in combination with the Ohyu et al. reference. Support for this amendment is clearly found in the application as filed thus no new matter has been added.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The rejections of claims 36, 45, 70, 79, 88, 94, and 100 under 35 U.S.C. §103 are respectfully traversed for at least the following reason. The Paulson et al. reference alone or in combination with the Ohyu et al. reference fails to teach or suggest all of the claim limitations. More specifically, Paulson et al. and Ohyu et al. fail to teach a flexible bag where the amount of deformable material in the flexible bag remains constant when magnetic susceptibility variations in the patient's body tissue are measured. Furthermore, this limitation has been previously examined in other claims of this application and has been found to be patentable over the prior art. Accordingly claims 36, 45, 70, 79, 88, 94, and 100 are believed to be allowable over Paulson et al. in view of Ohyu et al.

Claims 37-44, 46-57, 71-78, 80-87, 89-93, and 101-105 depend either directly or indirectly from claims 36, 45, 70, 79, 88, and 100 accordingly, claims 37-44, 46-57, 71-78, 80-87, 89-93, and 100-105 are also believed to be in a condition for allowance for at least the same reasons as claims 36, 45, 70, 79, 88, and 100 in addition to including additional limitations.

The rejection of claim 106 under 35 U.S.C. §103 is also respectfully traversed for at least the following reason. The Paulson et al. reference alone or in combination with the Ohyu et al. reference fails to teach or suggest all of the claim limitations. More specifically, the Paulson et al. and Ohyu et al. references do not teach or suggest an alternating current signal generating source. The Paulson et al. reference teaches an excitation coil that typically "is energized to produce a magnetic field of about 50 Gauss at a distance of 2 centimeters below the bottom of the tail piece." (col. 8, lines 16-17) This teaching shows that the Paulson et al. reference contemplates only a constant applied magnetic field produced by an excitation coil connected to a direct current signal generating source. There is no teaching or suggestion that the applied magnetic field is a time-varying magnetic field created by an applied field coil connected to an alternating current signal generating source as claimed in the present application. Accordingly, applicants submit that claim 106 is allowable over Paulson et al. in view of Ohyu et al. for at least this reason.

Claims 106 also includes the limitation of an electrostatic shield, which is not taught in the Paulson et al. reference alone or in combination with the Ohyu et al. reference. The Paulson et al. reference teaches a vertically extending array of copper wires used to conduct heat and act as a radiofrequency interference shield, but does not teach an electrostatic shield that is used to reduce or eliminate noise due to electrostatic coupling between the sensor and the patient as claimed in the present application. The electrostatic coupling between the sensor and the patient is due to the time-varying applied magnetic fields. As explained above, the Paulson et al. reference is directed towards a constant applied magnetic field which does not create the same problem of electrostatic coupling between the sensor and the patient. Even if a vertically extending array of copper wires could be reasonably construed as an electrostatic shield, the electrostatic shield claimed in this application is directed towards the solution of a different problem than the vertical wires in Paulson et al. Accordingly, claim 106 is believed to be allowable over Paulson et al. in view of Ohyu et al.

Claims 107-114 depend either directly or indirectly from claim 106. In addition, claim 109 includes the additional limitation of an "electrostatic shield . . . wherein overlapping layers of the wrapped material are insulated to prevent electrical contact", which is not taught or suggested in the cited prior art. Claim 110 includes the additional limitation of "the electrostatic shield comprises thin strips of conductive material . . . connected in a branching configuration", which is not taught or suggested in the cited prior art. Claim 112 includes the additional limitation of "the conductive strips are arranged on a thin substrate", which is not taught or suggested in the cited prior art. Claim 113 includes the additional limitation of "the thin substrate comprises a printed circuit board", which is not taught or suggested in the cited prior art. Claim 114 includes the additional limitation of "the conductive strips are placed on opposite sides of the printed circuit board", which is not taught or suggested in the cited prior art. Accordingly, claims 107-114 are also believed to be in a condition for allowance for at least the same reasons as claim 106 in addition to including additional limitations

The rejection of claim 115 under 35 U.S.C. §103 is also respectfully traversed for at least the following reason. The Paulson et al. reference alone or in combination with the Ohyu et al. reference fails to teach or suggest the limitation of an electrostatic shield. This limitation is believed to be patentable over the cited prior art for at least the reasons specifically detailed in the remarks for claim 106. Accordingly, claim 115 is believed to be in condition for allowance for at least this reason.

Claim 115 also includes the limitation of "the instrument is provided with means for displacing the sensor unit". This limitation is clearly not taught or suggested in the Paulson et al. reference alone or in combination with the Ohyu et al. reference. The displacement means is used to counteract the effects of temperature drift, which can cause the magnetic sensor to expand and contract over time due to temperature fluctuations. The Paulson et al. and Ohyu et al. references are directed towards SQUID sensors, which operate at cryogenic temperatures. Because thermal expansion of materials does not occur at cryogenic temperatures, temperature drift is not a problem for SQUID sensors.

The displacement means is clearly not disclosed in the cited prior art, and even if the displacement means could somehow be construed as inherently disclosed, the problem of temperature drift, which the displacement means addresses, was an unrecognized problem until the time of the present invention. Accordingly, claim 115 is believed to be allowable over Paulson et al. in view of Ohyu et al.

Claims 116-118 depend either directly or indirectly from 115 accordingly, claims 116-118 are also believed to be in a condition for allowance for at least the same reasons as 115 in addition to including additional limitations.

In view of the above amendments and the discussion relating thereto, it is respectfully submitted that the present application is in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130, maintained by the applicants' attorney.

Respectfully submitted,

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31